

3.2 Circular Functions & Linear Velocity

Name _____ Date _____ Period _____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Find the measures of two angles, one positive and one negative, that are coterminal with the given angle.

1) 60° 1) _____

2) 30° 2) _____

3) -45° 3) _____

4) 90° 4) _____

5) $\frac{\pi}{3}$ 5) _____

6) $-\frac{\pi}{4}$ 6) _____

For the given angle, name the quadrant in which the terminal side lies.

7) 85° 7) _____

8) -125° 8) _____

9) -740° 9) _____

Find the angle of smallest possible positive measure that is coterminal with the given angle.

10) 400° 10) _____

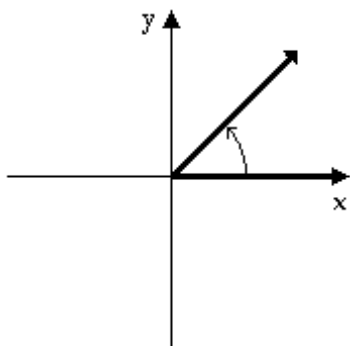
11) -340° 11) _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Determine the degree measure of the given angle.

12)

12) _____

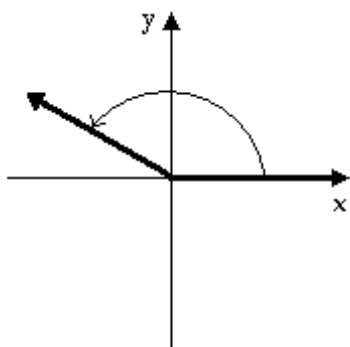


A) 120°

B) 45°

C) 60°

D) 135°



13)

13) _____

A) 120°

B) 30°

C) 60°

D) 150°

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Find the product. Be sure to indicate the units for the answer. Round approximate answers to the nearest tenth.

14) $\frac{4 \text{ rev}}{1 \text{ sec}} \cdot \frac{2\pi \text{ rad}}{1 \text{ rev}}$

14) _____

15) $\frac{55 \text{ rev}}{1 \text{ min}} \cdot \frac{6\pi \text{ ft}}{1 \text{ rev}}$

15) _____

16) $\frac{10 \text{ rad}}{1 \text{ min}} \cdot \frac{1 \text{ rev}}{2\pi \text{ rad}} \cdot \frac{60 \text{ min}}{1 \text{ hr}}$

16) _____

Solve.

17) Express the angular velocity of 900 rad/sec in rev/sec (to the nearest hundredth). 17) _____

Solve the problem.

18) A pulley of radius 7 cm rotates 15 times in 128 sec. Find the angular velocity of the pulley. 18) _____

19) A wheel with a 22-inch diameter is turning at the rate of 46 revolutions per minute. To the nearest inch per minute, what is the linear velocity of a point on the rim? 19) _____

20) A satellite in a circular orbit 879.4 mi above the earth makes one complete orbit every 83.42 min. What is its linear velocity? Use 3963 mi for the length of the radius of the earth. 20) _____

Answer Key

Testname: 3.2 CIRCULAR FUNCTIONS & LINEAR VELOCITY

- 1) $419^\circ, -301^\circ$
- 2) $419^\circ, -301^\circ$
- 3) $325^\circ, -395^\circ$
- 4) $325^\circ, -395^\circ$
- 5) $\frac{9\pi}{4}, -\frac{7\pi}{4}$
- 6) $\frac{9\pi}{4}, -\frac{7\pi}{4}$
- 7) II
- 8) I
- 9) II
- 10) 9°
- 11) 9°
- 12) B
- 13) D
- 14) 2400 rad/hr
- 15) 207.8 ft/min
- 16) 207.8 ft/min
- 17) 143.24 rev/s
- 18) $\frac{15\pi}{64}$ radians/sec
- 19) 3179 in./min
- 20) 364.7 mi/min